eyeheight

AS-2 SD/MD

High, standard and multi definition audio delayer and mixer

user guide

User Manual Versions

Versions	Changes	Date
0.01	First Version	18/04/08

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1 System Overview

1.1 The AS-2 SD/MD product

The **AS-2 SD/MD** is an embedded audio shuffler. It is capable of swapping or mixing between any of the 16 embedded audio channels available across all 4 embedded groups.

1.2 Associated Equipment for the AS-2 SD/MD

The **AS-2 SD/MD** processing card requires the following in order to set up and operate the unit.

1. An **etherBox** chassis (**FB-9E**). Up to six **AS-2 SD/MD** units and be installed in one chassis.
2. A **flexiPanel** control surface such as an **FP-9** or an **FP-10**.

Figure 1 - Front view of etherBox (FB-9E) fitted with FF-9 blank panel

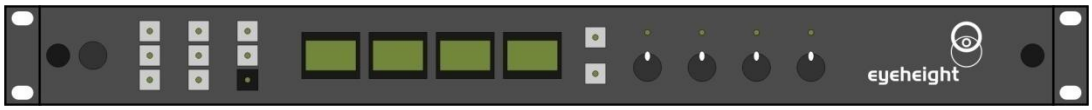

Figure 2 FP-9 flexiPanel can be fitted on the FB-9E or remotely using and RR-9 kit.

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2 Installation

This unit requires HD-SDI or SDI digital video connections to the BNC connectors. Optionally RS232, GPI's and a Tally may also be connected normally using CAT5e cable. The user should refer to the **etherBox** user manual for installation of the **AS-2 SD/MD** into a chassis and connection of **flexiPanel**s. This will also describe the process of acquiring a processing card (in this case the **AS-2 SD/MD**) by the **flexiPanel** which is necessary to access the menu structure within the **AS-2 SD/MD**.

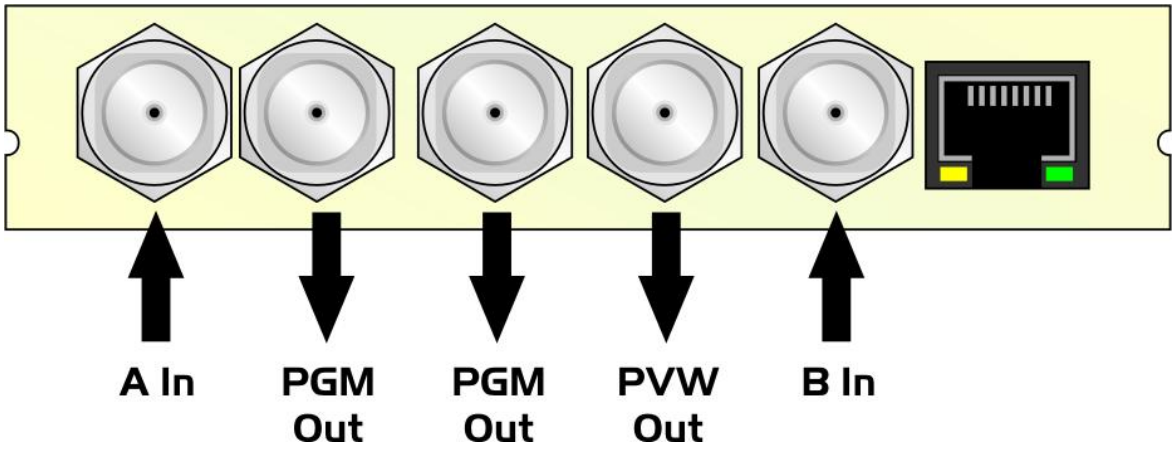

Figure 3 - Video connections to the as_2HD

See Section 5.1 for details of the GPI/Tally/RS-232 pinout.

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3 Operation

All **geNETics** products are controlled using a generic menu system. This generic menu system is operated from a generic panel (**flexiPanel FP-9** or **FP-10**). An **FP-9** is shown below (An **FP-10** has the same controls in a different layout style). For information about acquiring processor cards for control on a **flexiPanel** see the **etherBox** manual section 4.

3.1 General FlexiPanel control

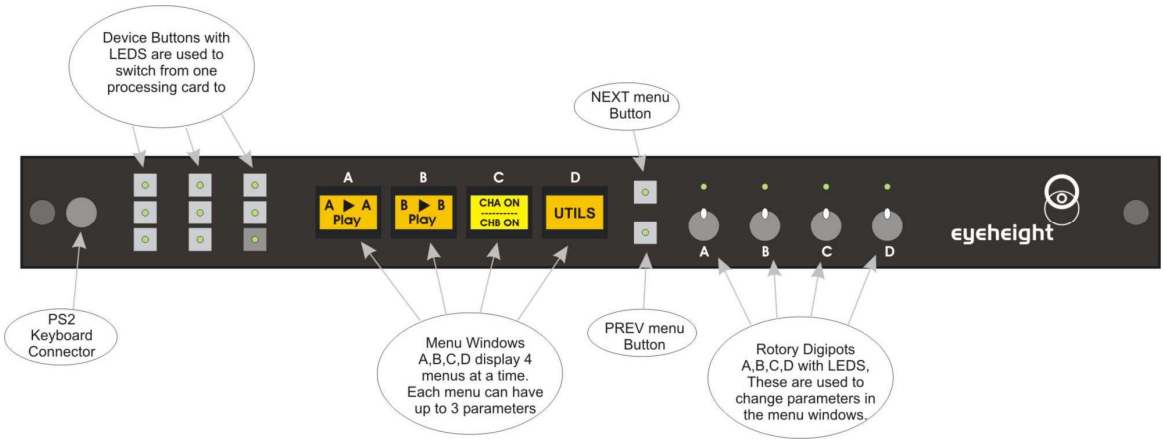
Device Buttons with LEDS are used to switch from one processing card to
NEXT menu Button
A
B
C
D
A ▶ A Play
B ▶ B Play
CHA ON
CHB ON
UTILS
eyeheight
PS2 Keyboard Connector
Menu Windows A,B,C,D display 4 menus at a time. Each menu can have up to 3 parameters
PREV menu Button
Rotory Digipots A,B,C,D with LEDS, These are used to change parameters in the menu windows.

Figure 4 flexiPanel (FP-9) controls.

3.1.1 Device buttons

There are 8 grey device buttons. These switch between the currently selected processing cards installed in the **etherBox**. It is also possible to select cards in another chassis if the I-Bus is connected to the other chassis.

3.1.2 Menu navigation

There are two ways to navigate from menu to menu.

1. Using the NEXT and PREV buttons. These are for “Flat” menu structures. The NEXT and PREV LEDS will flash while further menus are available.
2. Using a GOTO ANOTHER MENU LCD button (as below coloured orange). This is more common and will take you straight to a relevant set of menus. Examples are the Play and UTILS menu’s shown on Figure 8.

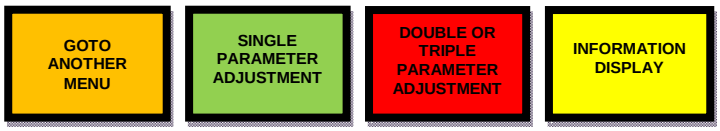

Figure 5 Types of menus showing their characteristic colours

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3.1.3 Parameter adjustment of a green menu

A green menu is one in which there is only one adjustable parameter. There are two ways to adjust the parameter in a green menu.

1. Press the green LCD button. This will increment the value in that window. This is most frequently done when the menu parameter is Textural for example switching a parameter between ON and OFF. In this case a button press is most natural.
2. Use the Rotary digipot (A,B,C or D) to adjust the parameter in the respective LCD window (A,B,C or D). The direction and speed of rotation enable numeric values to be set easily.

3.1.4 Parameter adjustment of a red menu

A red menu is one in which there is two or three adjustable parameters. In this case it is necessary to first select the menu by pressing the red button. When the red button is pressed it will turn green and either two or three of the rotary digipot LEDS will flash indicating that the respective rotary digipot will operate the respective parameter.

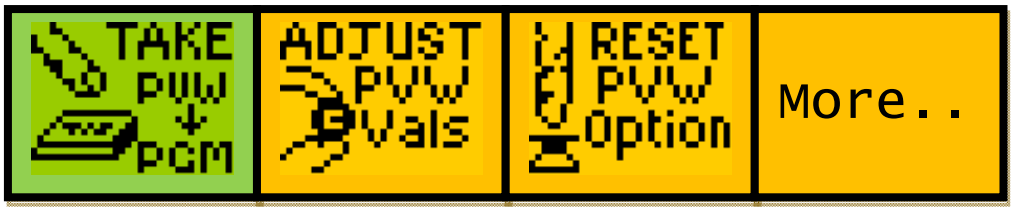
3.1.5 Information display

A Yellow menu (Which on most panels does look a light orange!) is one in which only information is displayed. An example of this is the software version display.

3.2 Primary audio shuffler control

3.2.1 The top level menus

The top level menu shown below gives direct access to the configuration menus for the primary sets of operations, and the Take operation.



Pressing the “Take” menu button will transfer the 16 channel audio settings on the Preview output to the Program output. When the “Take” has been carried out the display will change to “DONE” to indicate that the Program output matches the Preview output.

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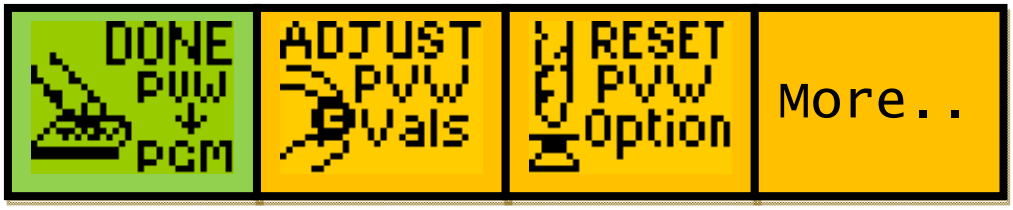


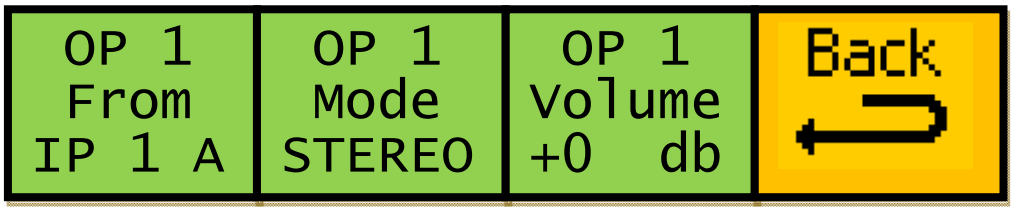
Changing any Preview setting will return the “Take” button back to the initial display.

Pressing the “More..” menu button will take you to the menus for the special purpose input status, groups, memories, resets and upgrade menus. See sections 3.2.4, 3.2.5, 3.2.6, 3.2.7and 3.2.8 for further details.

3.2.2 Adjusting Preview Settings

3.2.2.1 Selecting the Inputs and Setting Modes and Volumes

Pressing the “Adjust” menu button will display the first level of the Preview adjustment menus.



Mixing can be performed on any two of the 16 input stereo pairs from video Inputs A and B when using the special control windows software as shown below.

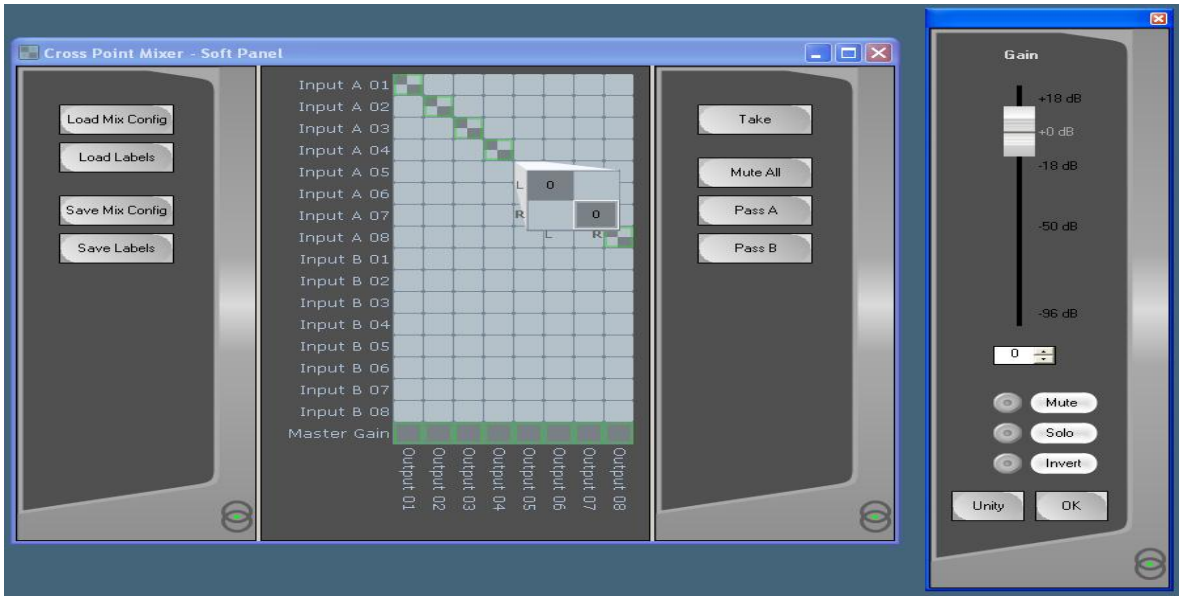


Figure 6 – Screen shot of Crosspoint Mixer software

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However, the **flexiPanel** (**FP-9**) menus control the channels as 8 stereo pairs on the A input and 8 stereo pairs on the B input which will be controlled and delayed to give 8 stereo pairs on the Preview output and 8 stereo pairs on the Program output. The options for the “From” menu are

Mode	**Result**
IP 1 A	Channels 1 & 2 (Stereo pair 1) on the A input
I P 2 A	Channels 3 & 4 (Stereo pair 2) on the A input
I P 3 A	Channels 5 & 6 (Stereo pair 3) on the A input
I P 4 A	Channels 7 & 8 (Stereo pair 4) on the A input
I P 5 A	Channels 9 & 10 (Stereo pair 5) on the A input
I P 6 A	Channels 11 & 12 (Stereo pair 6) on the A input
I P 7 A	Channels 13 & 14 (Stereo pair 7) on the A input
I P 8 A	Channels 15 & 16 (Stereo pair 8) on the A input
IP 1 B	Channels 1 & 2 (Stereo pair 1) on the B input
I P 2 B	Channels 3 & 4 (Stereo pair 2) on the B input
I P 3 B	Channels 5 & 6 (Stereo pair 3) on the B input
I P 4 B	Channels 7 & 8 (Stereo pair 4) on the B input
I P 5 B	Channels 9 & 10 (Stereo pair 5) on the B input
I P 6 B	Channels 11 & 12 (Stereo pair 6) on the B input
I P 7 B	Channels 13 & 14 (Stereo pair 7) on the B input
I P 8 B	Channels 15 & 16 (Stereo pair 8) on the B input

The options for the “Mode” menu are

Mode	**Result**
STEREO	Each channel of the stereo pair is fed straight through from the input to the output
L -> LR	The Left channel is fed through to both the Left and right Channels on the output
R -> LR	The Right channel is fed through to both the Left and right Channels on the output
Mono	Half the sum of the Input channels are fed through to both the Left and right Channels on the output
LRSWAP	The Left input channel is routed to the Right output channel and the Right input channel is routed to the Left output channel
MUTE	The Left and Right output channels are silenced

The values for the “Volume” menu are -72db to +18db

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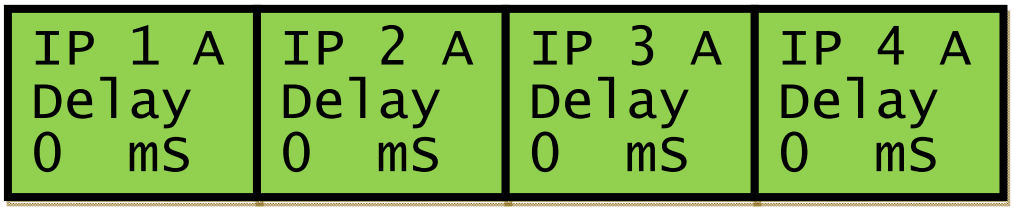
Pressing the “Next” button will step through the 8 output pairs until the delays menus are reached

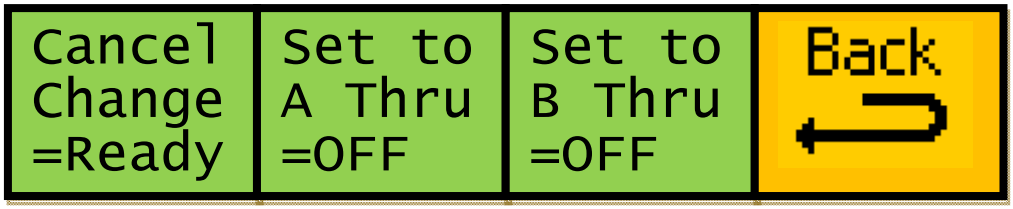
3.2.3 Adjusting Preview delays

Continuously stepping through Preview settings using the “Next” button will bring you to the “Delay” menus



Each Input pair can have a delay applied to them. The delay values are 0 to 1023 mS. Pushing in the “Menu Adjust” Buttons will zero the values. Pressing “Next” will step through the Input delay menus for Input A and Input B. Pressing “Prev” will step back through the menus.

3.2.4 Resetting



3.2.4.1 Cancel Change

Pressing the first button or adjusting digipot 1 will restore the Preview settings to the current Program settings. The menu will change from “Ready” to “Done”. Changing any Preview setting will put this menu back to “Ready”.

3.2.4.2 Set to A Thru

Pressing the second button or adjusting digipot 2 will set the unit so that

Input A Channels 1 and 2 go to Output 1

Input A Channels 3 and 4 go to Output 2

Input A Channels 5 and 6 go to Output 3

Input A Channels 7 and 8 go to Output 4

Input A Channels 9 and 10 go to Output 5

Input A Channels 11 and 12 go to Output 6

Input A Channels 13 and 14 go to Output 7

Input A Channels 15 and 16 go to Output 8

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The menu will change from “OFF” to “ON”. Changing any Preview setting will put this menu back to “OFF”.

3.2.4.3 Set to B Thru

Pressing the second button or adjusting digipot 2 will set the unit so that

Input B Channels 1 and 2 go to Output 1

Input B Channels 3 and 4 go to Output 2

Input B Channels 5 and 6 go to Output 3

Input B Channels 7 and 8 go to Output 4

Input B Channels 9 and 10 go to Output 5

Input B Channels 11 and 12 go to Output 6

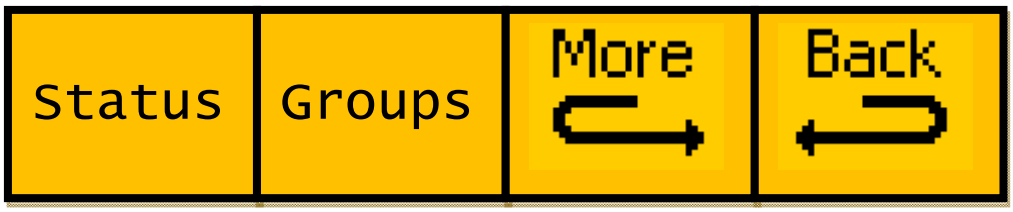
Input B Channels 13 and 14 go to Output 7

Input B Channels 15 and 16 go to Output 8

The menu will change from “OFF” to “ON”. Changing any Preview setting will put this menu back to “OFF”.

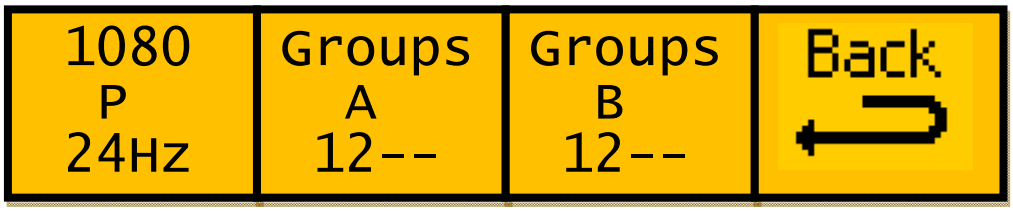
3.2.5 Utilities

Pressing the “Utilities” button will display the following set of menus.



3.2.5.1 Status

Pressing the “Status” menu button will display the following status information.



The menu buttons display the Line standard and the Audio Groups detected on inputs A and B. In the above example Group 1 and Group 2 were detected. The Line standards for both the A Input and the B Input must be the same.

3.2.5.2 Groups

Pressing the “Groups” menu button will display the following set of menus.

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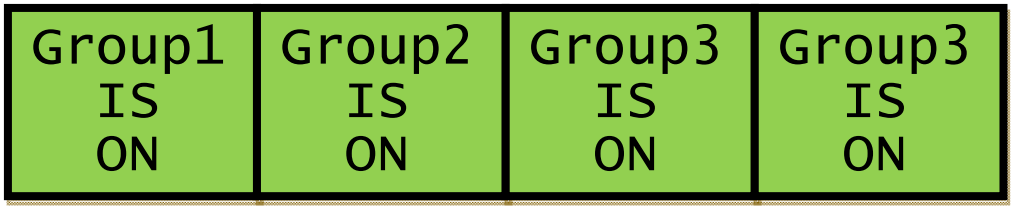


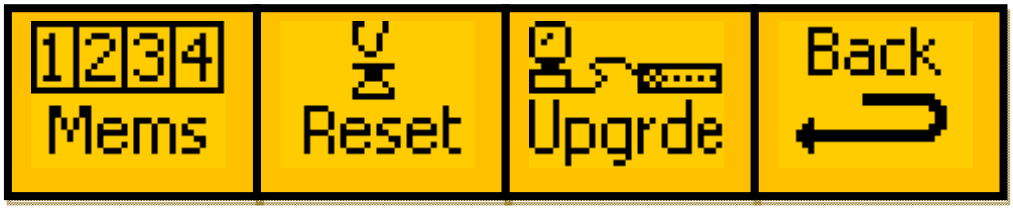
Pressing the relevant button or adjusting the relevant digipot will set the unit so that only the Groups that are selected to “ON” can be present in the Output.

Pressing the “PREV” button will return to the top menu level.

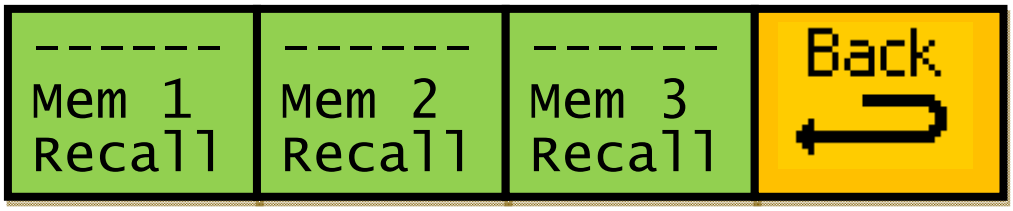
3.2.6 Memories etc

3.2.6.1 Memories

Pressing the “More...” button displays the following set of menus.

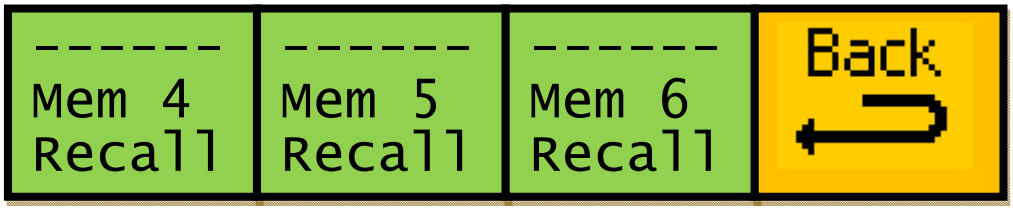


Pressing the “Mems” menu button displays the following menus



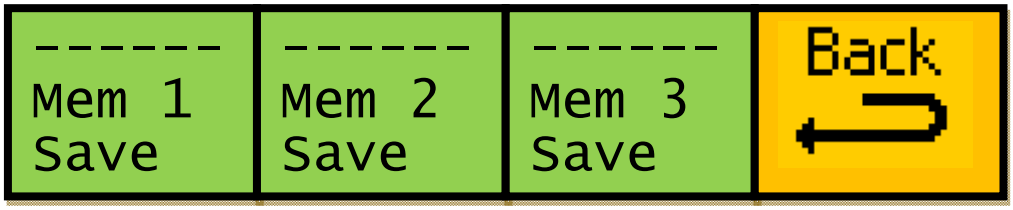
Pressing these menu buttons will recall saved Preview settings.

Pressing “NEXT” will display the following set of menus.



Pressing these menu buttons will recall saved Preview settings.

Pressing “NEXT” will display the following set of menus.



Pressing these menu buttons will save the current Preview settings to the relevant memory.

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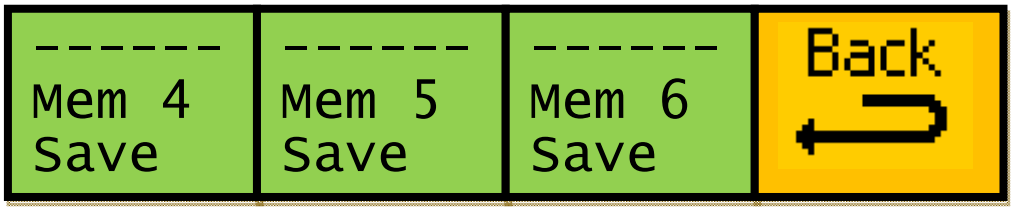
Pressing “NEXT” will display the following set of menus.



Pressing these menu buttons will save the current Preview settings to the relevant memory.

3.2.6.2 Naming User Memories

The user memories can be named with up to 6 characters. To do this plug in a PS-2 Keyboard into a **flexiPanel** and select the appropriate processor card with a device button. (See Figure 5 for connector location). To name memory 1, “TXroom”

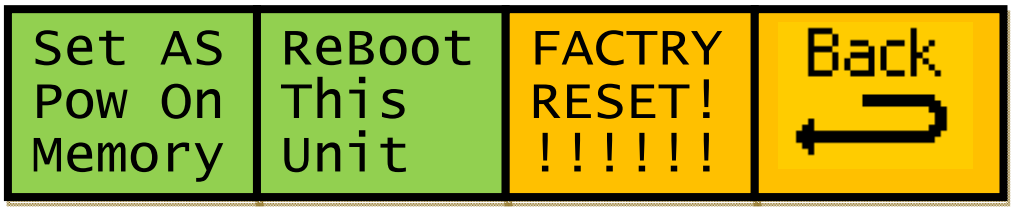
1. Hit F9 function key. The LCD displays will change to text entry mode
2. Type “M01:TXroom” and then press enter.
3. You may get a “not acknowledged” message, this does not matter.

Other memories can be named in the same way but changing the 01 to another memory number.

3.2.7 Resets

Pressing the “Reset” button will display the following set of menus

Pressing “RESETS” will bring up the following set of menus



Pressing “Set AS Pow On Memory” will set the current Preview settings as the values that will be automatically set when the unit is re-powered.

Pressing “ReBoot This Unit” will reset the unit as if it had been re-powered but without re-cycling the power. User Memories will not be reset.

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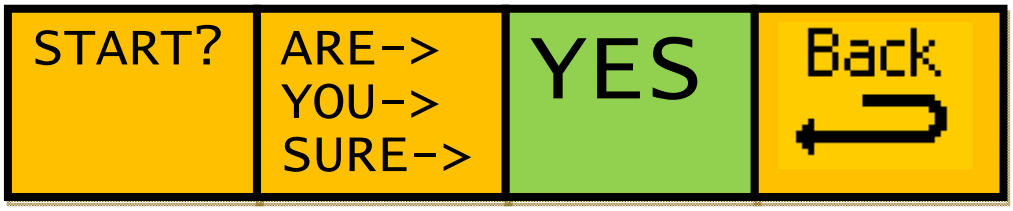
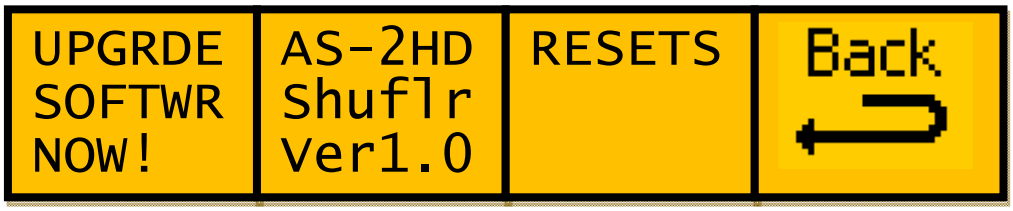
Pressing “FACTRY RESET” will display the following set of menus



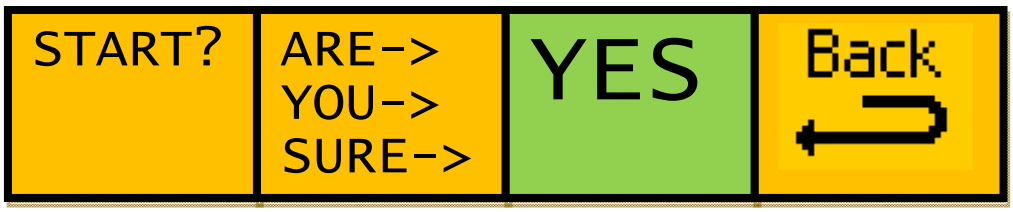
Pressing “YES” will restore all the factory default settings and will clear all the memories.

3.2.8 Upgrades

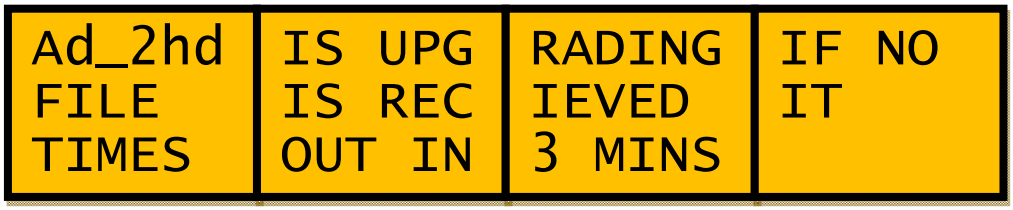
Pressing the “Upgrade” button will display the following set of menus



Pressing “UPGRDE SOFTWR NOW!” will display the following set of menus



Pressing “YES” will display the following set of menus



The unit will be set into the state where it can be field upgraded using the “Flasher” software which can be downloaded from our web site: www.eyeheight.com

3.3 Tamper Locking the AS-2 SD/MD.

The user can lock specific menus or all the menus on the **AS-2 SD/MD** so that it cannot be adjusted with a manual control panel. This does not affect automation.

To do this plug in a PS-2 Keyboard into a **flexiPanel** and select the appropriate processor card with a device button. (See Figure 5 for connector location). To lock only menu 5. (Next Logo for channel A)

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1. Hit F9 function key. The LCD displays will change to text entry mode
2. Type “L05:” and then press enter.

A padlock symbol will appear on the menu and it cannot be adjusted. To unlock menu 5, type “A05:” as step 2 above. Other menus are done in the same way

To lock the whole product type “L:” as step 2 above and to unlock the whole product type “A:” as step 2 above.

3.4 GPI/Tally Set-up

3.4.1 On-Board GPI’s

The **AS-2 SD/MD** is a **gENETics** product. The **gENETics** system uses generic Input/Output cards which have 3 GPI’s and one Tally output. These have been used in this system as opportunistic GPI’s which may be of use to the user. They do not provide a comprehensive GPI control but may be used as part of a GPI solution in conjunction with the GPI’s on the **etherBox**.

The operation of the three GPI’s is explained in the table below.

	GPI1	GPI2	GPI3	Effect
OFF	1	1	1	The GPI’s have no effect
Mem1	0	1	1	Recall Mem1 then TAKE.
Mem2	1	0	1	Recall Mem2 then TAKE.
Mem3	1	1	0	Recall Mem3 then TAKE.

0=Short to ground or logic 0V, 1=Pulled up internally or logic +3→+12V

Table 1 - On-Board GPI settings

3.4.2 On-Board Tally

As all 3 GPIs have been used there is no onboard Tally.

3.4.3 Configuring tallies on the etherBox

The **AS-2 SD/MD** can also make use of the three configurable tallies on the **etherBox** chassis. The **etherBox** chassis has three usable tallies. These are 11,12 and 13. Set up these menus for the box number and tally number for channel A and channel B. If you do not wish to use a tally set the box number to 0. Refer to the **etherBox** manual.

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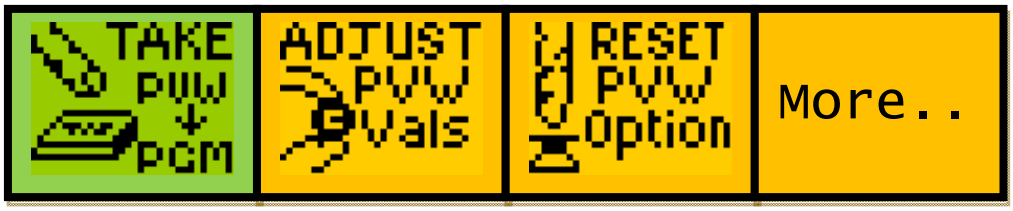
4 The AS-2 SD/MD Menu Set

The following set of menus defines the operational controls of the AS-2SD/MD.

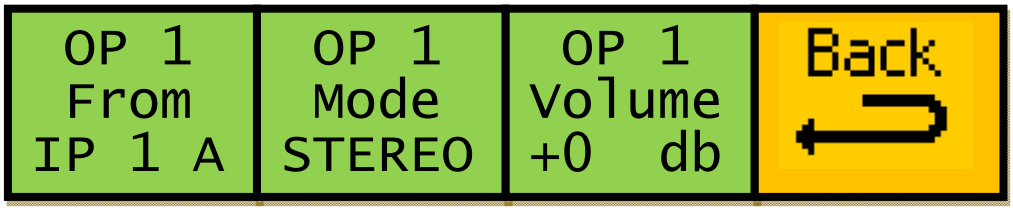
Note: Only parameters with RED menu numbers are stored in the memories and the Power-ON memory.

Menus 00-03 Top Level Menus



Menu Num.	Heading	Function
0	Take 0 – 1 Where 1 = Do Take	Setting this menu to “DONE” will transfer all the “Preview” settings to the “Program” output.
1	Adjust	Pressing this menu button will display the first level of the Preview adjustment menus (Go To Menu 4).
2	Reset	Pressing this menu button will display the Reset Preview menus (Go To Menu 64).
3	More	Pressing this menu button will display the special purpose input status, groups, memories, resets and upgrade menus (Go To Menu 52).

Menus 04-07 Preview Adjustment Menus



Menu Num.	Heading	Function
4	Input 0 – 15	This menu controls which stereo input

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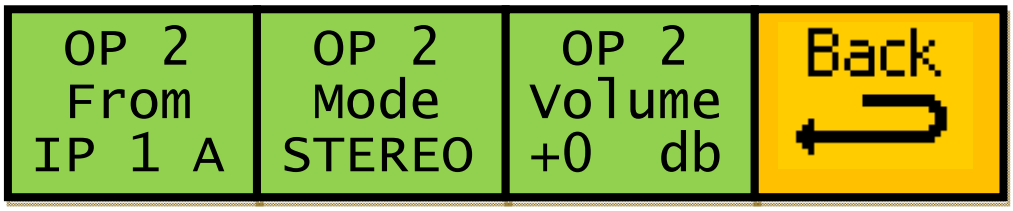
	IP 1 A IP 2 A IP 3 A IP 4 A IP 5 A IP 6 A IP 7 A IP 8 A IP 1 B IP 2 B IP 3 B IP 4 B IP 5 B IP 6 B IP 7 B IP 8 A	pair will be fed to Output 1
5	Mode 0-5 STEREO L->LR R->LR MONO LRSWAP MUTE	This menu controls the input mode for Output 1
6	Volume 0-90 -72db to +18db	This menu controls the input volume
7	Back	Pressing this menu button will display the top level menus (Go To Menu 0).

Menus 08-011 Preview Adjustment Menus



Menu Num.	Heading	Function
8	Input 0 – 15 IP 1 A IP 2 A	This menu controls which stereo input pair will be fed to Output 2

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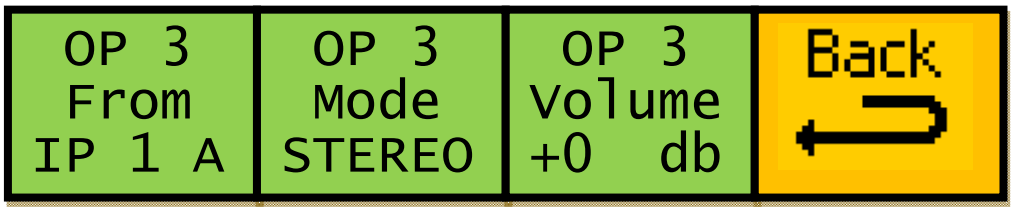
	IP 3 A IP 4 A IP 5 A IP 6 A IP 7 A IP 8 A IP 1 B IP 2 B IP 3 B IP 4 B IP 5 B IP 6 B IP 7 B IP 8 A	
9	Mode 0-5 STEREO L->LR R->LR MONO LRSWAP MUTE	This menu controls the input mode for Output 2
10	Volume 0-90 -72db to +18db	This menu controls the input volume
11	Back	Pressing this menu button will display the top level menus (Go To Menu 0).

Menus 12-15 Preview Adjustment Menus



Menu Num.	Heading	Function
12	Input 0 – 15 IP 1 A IP 2 A IP 3 A IP 4 A	This menu controls which stereo input pair will be fed to Output 3

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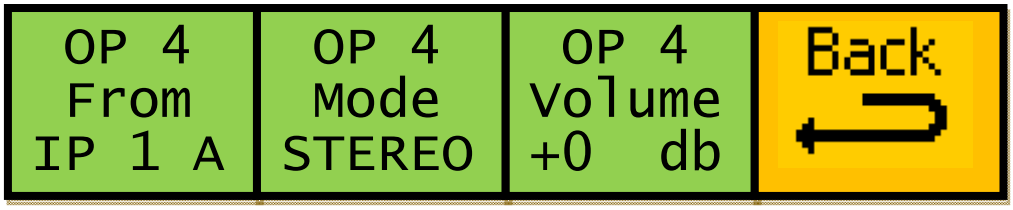
	IP 5 A IP 6 A IP 7 A IP 8 A IP 1 B IP 2 B IP 3 B IP 4 B IP 5 B IP 6 B IP 7 B IP 8 A	
13	Mode 0-5 STEREO L->LR R->LR MONO LRSWAP MUTE	This menu controls the input mode for Output 3
14	Volume 0-90 -72db to +18db	This menu controls the input volume
15	Back	Pressing this menu button will display the top level menus (Go To Menu 0).

Menus 16-19 Preview Adjustment Menus



Menu Num.	Heading	Function
16	Input 0 – 15 IP 1 A IP 2 A IP 3 A IP 4 A IP 5 A IP 6 A	This menu controls which stereo input pair will be fed to Output 4

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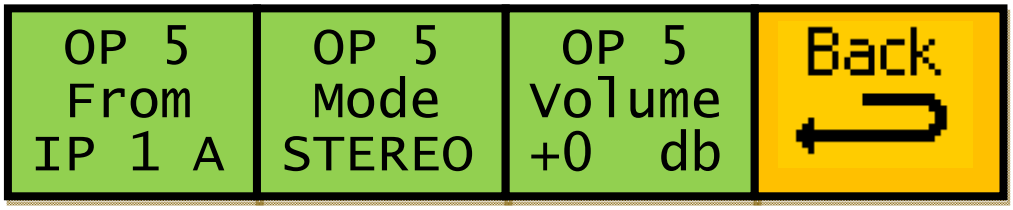
	IP 7 A IP 8 A IP 1 B IP 2 B IP 3 B IP 4 B IP 5 B IP 6 B IP 7 B IP 8 A	
17	Mode 0-5 STEREO L->LR R->LR MONO LRSWAP MUTE	This menu controls the input mode for Output 4
18	Volume 0-90 -72db to +18db	This menu controls the input volume
19	Back	Pressing this menu button will display the top level menus (Go To Menu 0).

Menus 20-23 Preview Adjustment Menus



Menu Num.	Heading	Function
20	Input 0 – 15 IP 1 A IP 2 A IP 3 A IP 4 A IP 5 A IP 6 A IP 7 A IP 8 A	This menu controls which stereo input pair will be fed to Output 5

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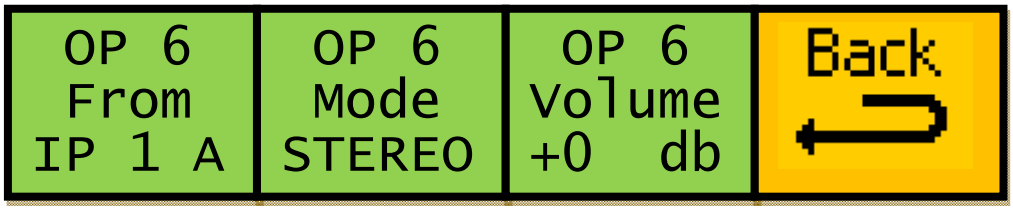
	IP 1 B IP 2 B IP 3 B IP 4 B IP 5 B IP 6 B IP 7 B IP 8 A	
21	Mode 0-5 STEREO L->LR R->LR MONO LRSWAP MUTE	This menu controls the input mode for Output 5
22	Volume 0-90 -72db to +18db	This menu controls the input volume
23	Back	Pressing this menu button will display the top level menus (Go To Menu 0).

Menus 24-27 Preview Adjustment Menus



Menu Num.	Heading	Function
24	Input 0 – 15 IP 1 A IP 2 A IP 3 A IP 4 A IP 5 A IP 6 A IP 7 A IP 8 A IP 1 B IP 2 B	This menu controls which stereo input pair will be fed to Output 6

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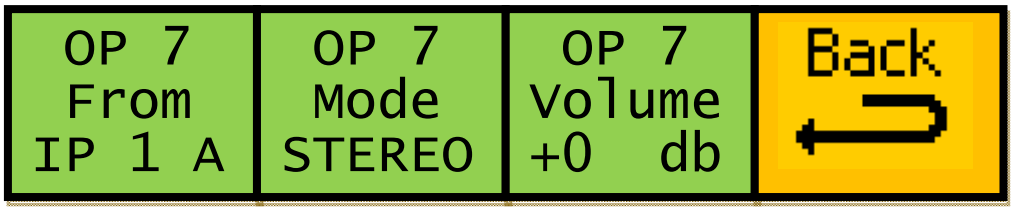
	IP 3 B IP 4 B IP 5 B IP 6 B IP 7 B IP 8 A	
25	Mode 0-5 STEREO L->LR R->LR MONO LRSWAP MUTE	This menu controls the input mode for Output 6
26	Volume 0-90 -72db to +18db	This menu controls the input volume
27	Back	Pressing this menu button will display the top level menus (Go To Menu 0).

Menus 28-31 Preview Adjustment Menus



Menu Num.	Heading	Function
28	Input 0 – 15 IP 1 A IP 2 A IP 3 A IP 4 A IP 5 A IP 6 A IP 7 A IP 8 A IP 1 B IP 2 B IP 3 B IP 4 B	This menu controls which stereo input pair will be fed to Output 7

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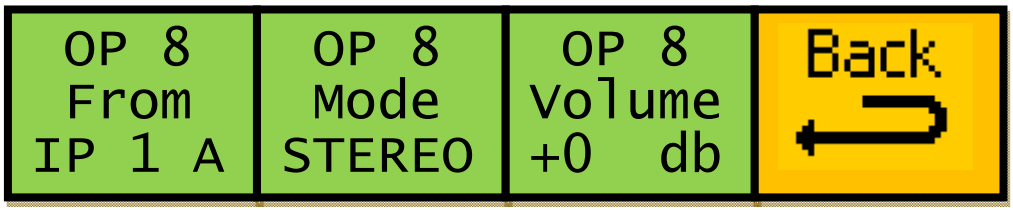
	IP 5 B IP 6 B IP 7 B IP 8 A	
29	Mode 0-5 STEREO L->LR R->LR MONO LRSWAP MUTE	This menu controls the input mode for Output 7
30	Volume 0-90 -72db to +18db	This menu controls the input volume
31	Back	Pressing this menu button will display the top level menus (Go To Menu 0).

Menus 32-35 Preview Adjustment Menus



Menu Num.	Heading	Function
32	Input 0 – 15 IP 1 A IP 2 A IP 3 A IP 4 A IP 5 A IP 6 A IP 7 A IP 8 A IP 1 B IP 2 B IP 3 B IP 4 B IP 5 B IP 6 B	This menu controls which stereo input pair will be fed to Output 8

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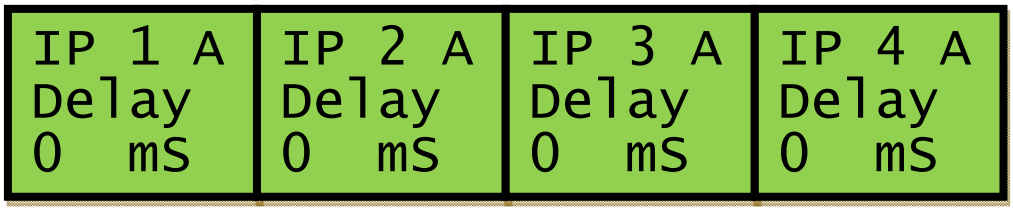
	IP 7 B IP 8 A	
33	Mode 0-5 STEREO L->LR R->LR MONO LRSWAP MUTE	This menu controls the input mode for Output 8
34	Volume 0-90 -72db to +18db	This menu controls the input volume
35	Back	Pressing this menu button will display the top level menus (Go To Menu 0).

Menus 36-39 Input Delay Menus



Menu Num.	Heading	Function
36	Input Delay 1-16383	Input delay in milliseconds for Input 1 on the A Input
37	Input Delay 1-16383	Input delay in milliseconds for Input 2 on the A Input
38	Input Delay 1-16383	Input delay in milliseconds for Input 3 on the A Input
39	Input Delay 1-16383	Input delay in milliseconds for Input 4 on the A Input

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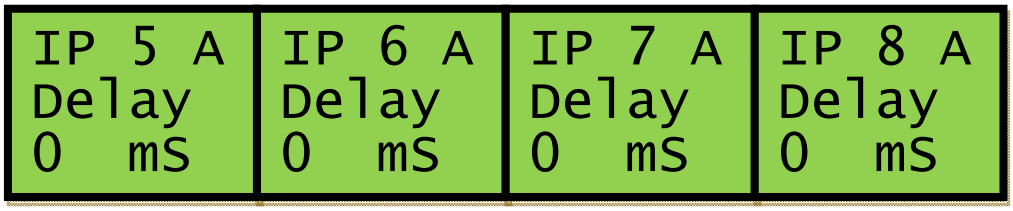
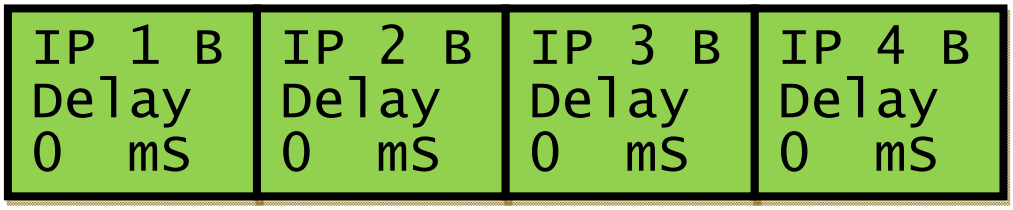
Menus 40-43 Input Delay Menus



Menu Num.	Heading	Function
40	Input Delay 1-16383	Input delay in milliseconds for Input 5 on the A Input
41	Input Delay 1-16383	Input delay in milliseconds for Input 6 on the A Input
42	Input Delay 1-16383	Input delay in milliseconds for Input 7 on the A Input
43	Input Delay 1-16383	Input delay in milliseconds for Input 8 on the A Input

Menus 44-47 Input Delay Menus



Menu Num.	Heading	Function
44	Input Delay 1-16383	Input delay in milliseconds for Input 1 on the B Input
45	Input Delay 1-16383	Input delay in milliseconds for Input 2 on the B Input
46	Input Delay 1-16383	Input delay in milliseconds for Input 3 on the B Input

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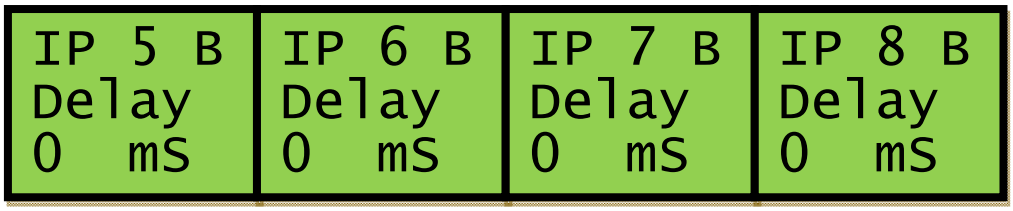
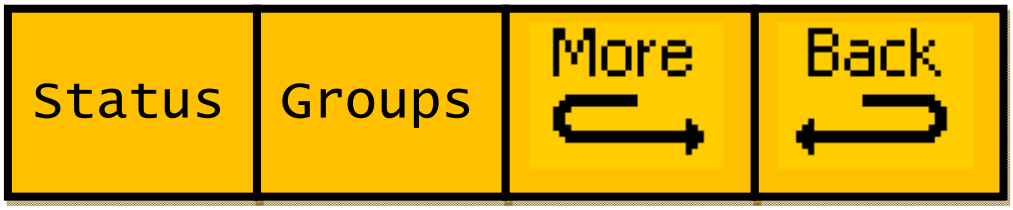
47	Input Delay 1-16383	Input delay in milliseconds for Input 4 on the B Input

Menus 48-51 Input Delay Menus



Menu Num.	Heading	Function
48	Input Delay 1-16383	Input delay in milliseconds for Input 5 on the B Input
49	Input Delay 1-16383	Input delay in milliseconds for Input 6 on the B Input
50	Input Delay 1-16383	Input delay in milliseconds for Input 7 on the B Input
51	Input Delay 1-16383	Input delay in milliseconds for Input 8 on the B Input

Menus 52-55 Utility Menus



Menu Num.	Heading	Function
52	Status	Pressing this menu button will display the Status menus (Go To Menu 56)
53	Groups	Pressing this menu button will display the Group menus (Go To Menu 60)

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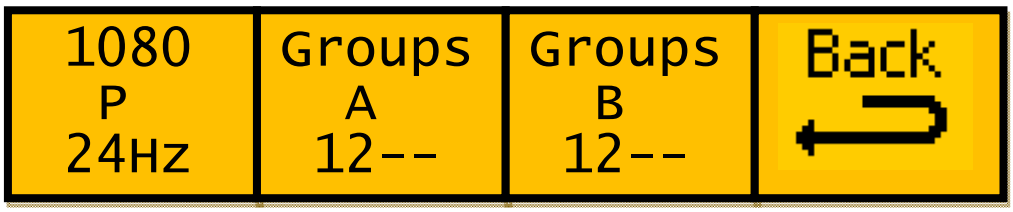
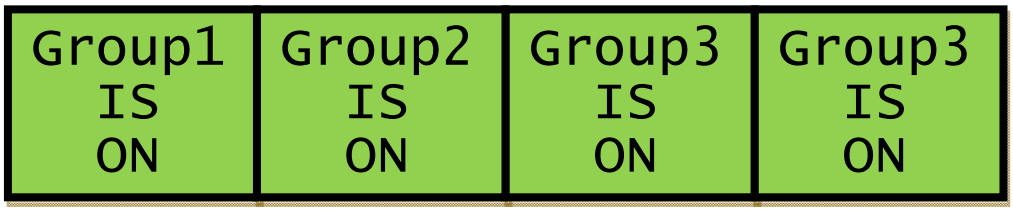
54	More	Pressing this menu button will display the Memory etc menus (Go To Menu 76)
55	Back	Pressing this menu button will display the top level menus (Go To Menu 0)

Menus 56-59 Status Menus



Menu Num.	Heading	Function
56	Video Standard	This menu displays the current video standard
57	Groups A	This menu displays the detected Groups for Input A
58	Groups B	This menu displays the detected Groups for Input B
59	Back	Pressing this menu button will display the Utility menus (Go To Menu 52)

Menus 60-63 Group Menus



Menu Num.	Heading	Function
60	Group 1 0 Off 1 On	Controls if Group 1 can be present in the output
61	Group 2 0 Off 1 On	Controls if Group 2 can be present in the output

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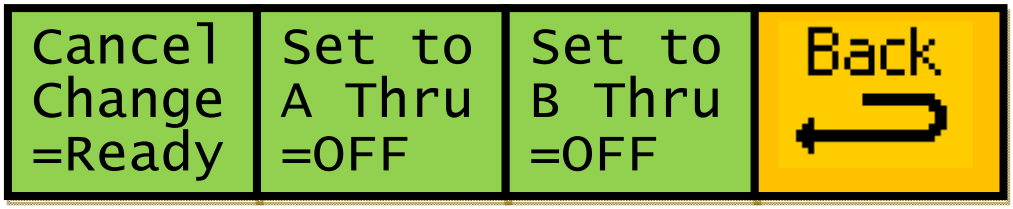
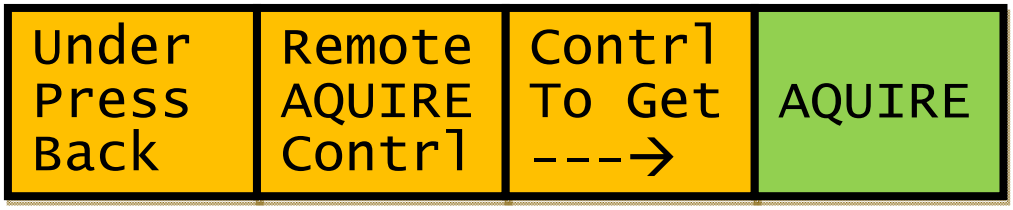
62	Group 3 0 Off 1 On	Controls if Group 3 can be present in the output
63	Group 4 0 Off 1 On	Controls if Group 4 can be present in the output

Menus 64-67 Reset Preview Menus



Menu Num.	Heading	Function
64	Cancel 0 Ready 1 Done	Pressing this button will restore the Preview settings to the current Program settings
65	A Thru 0 Off 1 On	Pressing this button will set the Preview Output to the Input A default settings See **Error! Reference source not found.**
66	B Thru 0 Off 1 On	Pressing this button will set the Preview Output to the Input B default settings See **Error! Reference source not found.**
67	Back	Pressing this menu button will display the Top Level menus (Go To Menu 0)

Menus 68-71 Under Computer Control Splash Menus



This set of menus is displayed while the SA-2 is under computer control.

Pressing “AQUIRE” will give control back to the control panel and Menus 0-3 will be displayed.

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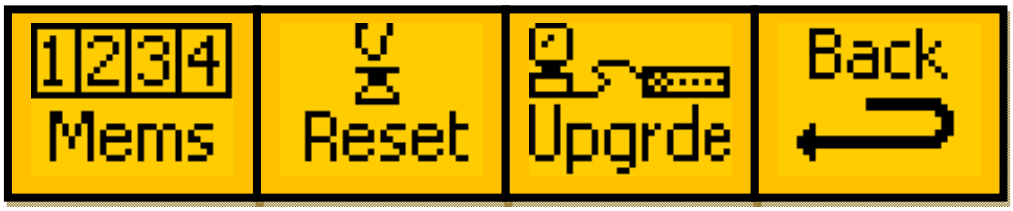
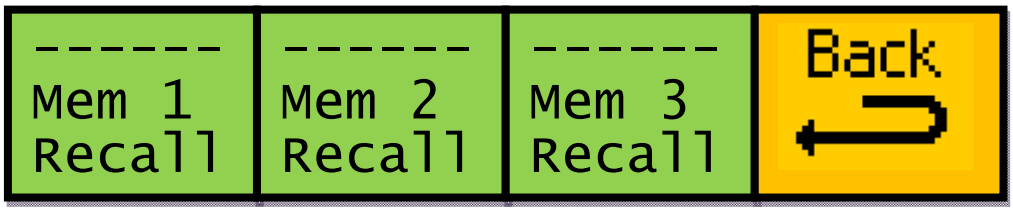
Menus 72-75 Not used

Menus 76-79 Utilities Menus



Menu Num.	Heading	Function
76	Mems	Pressing this button will display the Recall Memory Menus (Go To Menu 80)
77	Reset	Pressing this button will display the Reset menus (Go to Menu 104)
78	Upgrade	Pressing this button will display the Upgrade menus (Go To Menu 104)
79	Back	Pressing this menu button will display the upper level Utility menus (Go To Menu 52)

Menus 80-94 Memory Menus



Menu Num.	Heading	Function
80	MEM1	Pressing this will recall Memory number 1. User Names can be programmed in to the memories using a keyboard. See Section 3.2.6.2
81	MEM2	Pressing this will recall Memory number 2.
82	MEM3	Pressing this will recall Memory number 3.
83	BACK	Pressing this menu button will display the Top Level menus (Go To Menu 0)

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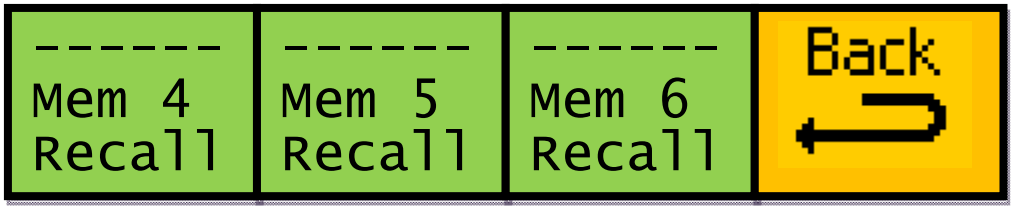
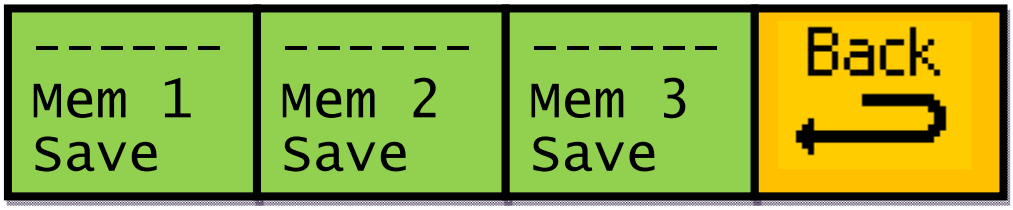
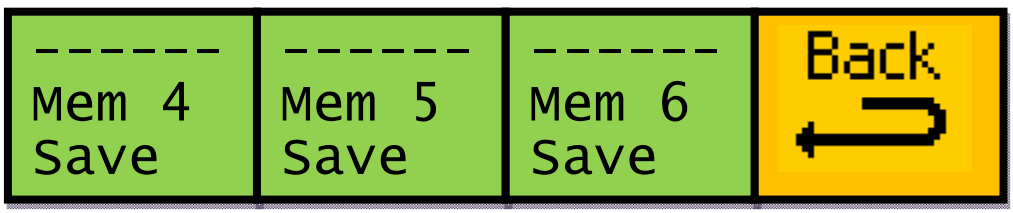


Menu Num.	Heading	Function
84	MEM4	Pressing this will recall Memory number 4.
85	MEM5	Pressing this will recall Memory number 5.
86	MEM6	Pressing this will recall Memory number 6.
87	BACK	Pressing this menu button will display the Top Level menus (Go To Menu 0)



Menu Num.	Heading	Function
88	SAVE MEM1	Pressing this will Save Memory number 1.
89	SAVE MEM2	Pressing this will Save Memory number 2.
90	SAVE MEM3	Pressing this will Save Memory number 3.
91	BACK	Pressing this menu button will display the Top Level menus (Go To Menu 0)



Menu Num.	Heading	Function
92	SAVE MEM4	Pressing this will Save Memory number 4.
93	SAVE MEM5	Pressing this will Save Memory number 5.

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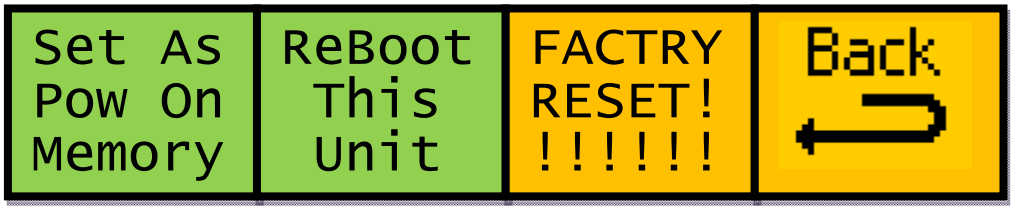
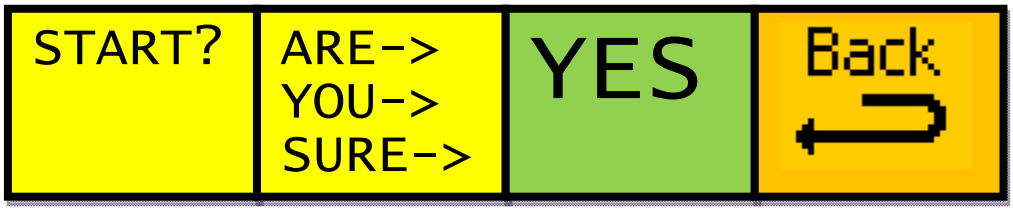
94	SAVE MEM6	Pressing this will Save Memory number 6.
95	BACK	Pressing this menu button will display the Top Level menus (Go To Menu 0)

Menus 96-101 Reset Menus



Menu Num.	Heading	Function
96	Set as Power on Memory	Pressing this will set the current settings as the default settings when the unit is powered up. This only applies to menus whose menu number is in RED.
97	Reboot this unit	This applies a warm restart to the unit. It is the software equivalent of recycling the power.
98	Factory Reset	Pressing this will take you to the Factory Reset Last Chance menu. (Go To Menu 44).
99	BACK	Pressing this menu button will display the Top Level menus (Go To Menu 0)

Menus 100-103 Reset Confirmation Menus



Menu Num.	Heading	Function
100	----	----
101	----	----
102	YES, I want to do a factory reset!	This will Start a factory Reset of the unit. This will Wipe ALL Cages and Settings that may have been previously set-up. Only do this if you are setting up from scratch, or there is a problem with your unit.
103	BACK	Pressing this menu button will display

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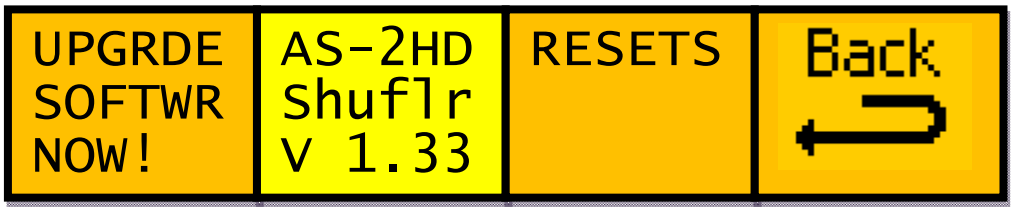
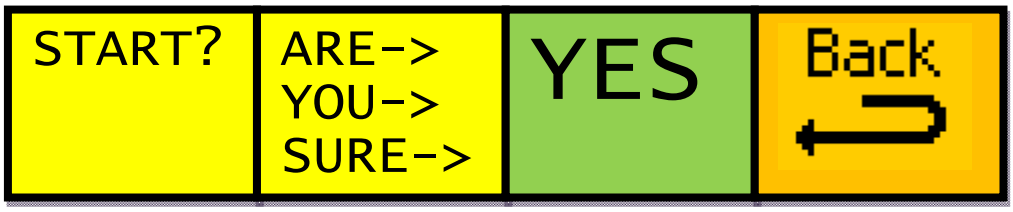
		the Top Level menus (Go To Menu 0)

Menus 104-107 Resets and Software Upgrade Menus



Menu Num.	Heading	Function
104	Upgrade Software	Pressing this will take you to the Software Upgrade last chance menu. (Go To Menu 48).
105	Software Version	This window displays the software version.
106	Resets	Pressing this will take you to the Reset Options. (Go To Menu 92).
107	BACK	Pressing this menu button will display the Top Level menus (Go To Menu 0)

Menus 108-111 Software Upgrade Confirmation Menus



Menu Num.	Heading	Function
108	----	----
109	----	----
110	YES, I want to start a software upgrade	This will Start a software upgrade of the unit. You will need to follow the instructions in the etherbox (FB-9E) manual or the “Flasher User Manual” to correctly perform this procedure. This will Wipe ALL Logos and Settings that may have been previously set-up. The unit MUST be installed in an FB-9E to perform an upgrade.
111	BACK	Pressing this menu button will display the Top Level menus (Go To Menu 0)

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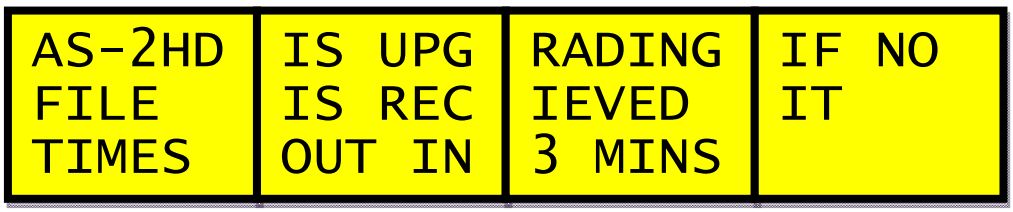
Menus 112-115 Upgrade Info Menus



Menu Num.	Heading	Function
112	----	This is a system message. If you press “Software Upgrade” then this message appears. If you have done this accidentally, simply WAIT 3 minutes and the system will return back to normal.

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5 Technical Appendix

5.1 GPI/Tally/RS232 technical information.

The Processor card has an RJ-45 connector with GPI, Tally and RS232 connections as shown below:

1	GPI-1	White/Orange
2	GPI-2	Orange
3	GPI-3	White/Green
4	GND	Blue
5	RS232 TX	White/Blue
6	RS232 RX	Green
7	Not Used	White/Brown
8	Tally (open collector)	Brown

Table 2 GPI/Tally and RS232 pin-out on RJ-45.

5.1.1 GPI Inputs.

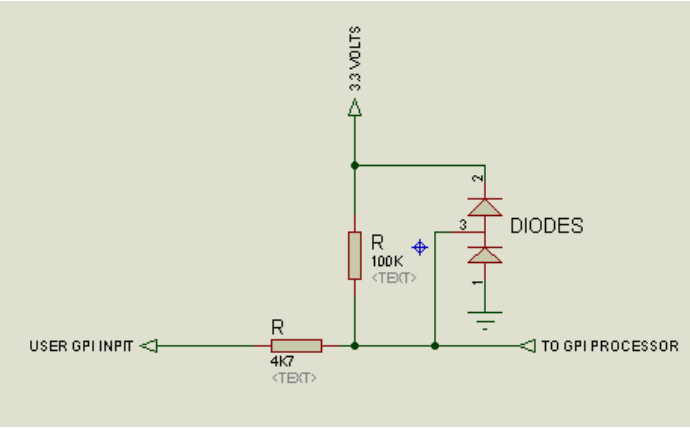

Figure 7 Typical GPI Input

GPI's are normally activated by a short to ground. The GPI has its own internal pull-up resistor. If the user is interfacing with logic then

- Vhigh = +12V>Vin>+3V
- Vlow = +0.3V>Vin>0V

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5.1.2 Tally Output.

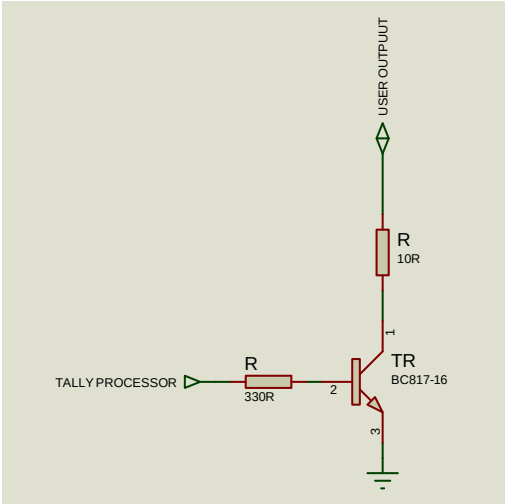

Figure 8 Tally Output

The user Tally Output is an open collector transistor. The drain should be <200mA. An electro-mechanical relay can be operated by this as shown in the example below.

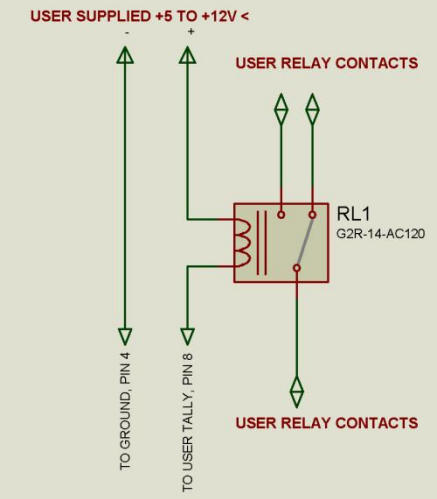

Figure 9 Tally interface to relay.

5.1.3 RS232 Interface.

This loosely follows the pin convention of EIA-561 which is a standard for RS232 on an RJ45 cable. Only TX, RX and Signal ground (pin 4) are implemented. For the **AS-2SD/MD** the following RS232 parameters apply:

- 115Kbaud
- 8 Bits, no parity
- 1 Stop bit.

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5.2 On-Board automation protocol.

5.2.1 Implementation on RS232

A simple text based protocol has been implemented on the RS232 interface. All text strings are shown in inverted commas; do not include them in the actual command sent. Each byte within a text string must be sent within 10mS of each other or the command will time out. This on-board protocol is not the same as the geNETics protocol. Refer to the geNETics protocol in section 6 (Product Automation) of the etherbox manual. GeNETics protocol is used to control a number of processor cards using one connection.

The command set is as follows:

Command	Meaning	Example hex string
“TA”	TAKE. Same as pressing Menu 0	54,41
“AT”	A Through. Same as pressing Menu 65. See 3.2.4.2	41,54
“BT”	B Through. Same as pressing Menu 65. See 3.2.4.3	42,54
“PP”	Program to Preview. Same as pressing Menu 64. See 3.2.4.1	50,50
“M1”	Recalls User Presetable Memory 1.	4D,31
“M2”	Recalls User Presetable Memory 2.	4D,32
“M3”	Recalls User Presetable Memory 3.	4D,33
“M4”	Recalls User Presetable Memory 4.	4D,34

A response will occur within 100mS of the command. The responses are as follows:

Response	Meaning	Hex string
“OK”	Command was understood and will implement.	4F,4B
“E0”	Command timed out.	45,30
“E1”	Error 1. Unknown command.	45,31
“E2”	Error 2. Next Logo number is not in range.	45,32

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“E3”	Error 3. Logo has been asked to fade down when it is down already, or up when it is up already	45,33

5.3 geNETics Automation Protocol Parameter table.

This is the Automatically extracted parameters for the **AS-2SD/MD**. This is used for the generic **geNETics** automation protocol. See **etherBox** manual for a full description of its usage.

Menu	Text	Low	Up	Lev	Txt1	Txt2	Txt3	Txt4	Txt5	Txt6	Txt7	Txt8	Txt9	Txt10						
0	{# }	0	1	A	[Gr]	[Gr]														
1	[Gr]	N/A	N/A	A																
2	[Gr]	N/A	N/A	A																
3	{More..}{ }{ }	N/A	N/A	A																
4	{ OP 1 }{ From }{# }	0	15	A	IP 1 A	IP 2 A L->	IP 3 A R->	IP 4 A	IP 5 A	IP 6 A	IP 7 A	IP 8 A	IP 1 B	IP 2 B	IP 3 B	IP 4 B	IP 5 B	IP 6 B	IP 7 B	
5	{ OP 1 }{ Mode }{# }	0	5	A	STEREO	LR	LR	MONO	LRSWAP	MUTE										
6	{ OP 1 }{Volume}{# db}	0	90	A																
7	[Gr]	N/A	N/A	A																
8	{ OP 2 }{ From }{# }	0	15	A	IP 1 A	IP 2 A L->	IP 3 A R->	IP 4 A	IP 5 A	IP 6 A	IP 7 A	IP 8 A	IP 1 B	IP 2 B	IP 3 B	IP 4 B	IP 5 B	IP 6 B	IP 7 B	
9	{ OP 2 }{ Mode }{# }	0	5	A	STEREO	LR	LR	MONO	LRSWAP	MUTE										
10	{ OP 2 }{Volume}{# db}	0	90	A																
11	[Gr]	N/A	N/A	A																
12	{ OP 3 }{ From }{# }	0	15	A	IP 1 A	IP 2 A L->	IP 3 A R->	IP 4 A	IP 5 A	IP 6 A	IP 7 A	IP 8 A	IP 1 B	IP 2 B	IP 3 B	IP 4 B	IP 5 B	IP 6 B	IP 7 B	
13	{ OP 3 }{ Mode }{# }	0	5	A	STEREO	LR	LR	MONO	LRSWAP	MUTE										
14	{ OP 3 }{Volume}{# db}	0	90	A																
15	[Gr]	N/A	N/A	A																
16	{ OP 4 }{ From }{# }	0	15	A	IP 1 A	IP 2 A L->	IP 3 A R->	IP 4 A	IP 5 A	IP 6 A	IP 7 A	IP 8 A	IP 1 B	IP 2 B	IP 3 B	IP 4 B	IP 5 B	IP 6 B	IP 7 B	
17	{ OP 4 }{ Mode }{# }	0	5	A	STEREO	LR	LR	MONO	LRSWAP	MUTE										
18	{ OP 4 }{Volume}{# db}	0	90	A																
19	[Gr]	N/A	N/A	A																
20	{ OP 5 }{ From }{# }	0	15	A	IP 1 A	IP 2 A L->	IP 3 A R->	IP 4 A	IP 5 A	IP 6 A	IP 7 A	IP 8 A	IP 1 B	IP 2 B	IP 3 B	IP 4 B	IP 5 B	IP 6 B	IP 7 B	
21	{ OP 5 }{ Mode }{# }	0	5	A	STEREO	LR	LR	MONO	LRSWAP	MUTE										
22	{ OP 5 }{Volume}{# db}	0	90	A																
23	[Gr]	N/A	N/A	A																
24	{ OP 6 }{ From }{# }	0	15	A	IP 1 A	IP 2 A L->	IP 3 A R->	IP 4 A	IP 5 A	IP 6 A	IP 7 A	IP 8 A	IP 1 B	IP 2 B	IP 3 B	IP 4 B	IP 5 B	IP 6 B	IP 7 B	
25	{ OP 6 }{ Mode }{# }	0	5	A	STEREO	LR	LR	MONO	LRSWAP	MUTE										
26	{ OP 6 }{Volume}{# db}	0	90	A																
27	[Gr]	N/A	N/A	A																

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28	{ OP 7 }{ From }{# }	0	15	A	IP 1 A	IP 2 A	IP 3 A	IP 4 A	IP 5 A	IP 6 A	IP 7 A	IP 8 A	IP 1 B	IP 2 B	IP 3 B	IP 4 B	IP 5 B	IP 6 B	IP 7 B
29	{ OP 7 }{ Mode }{# }	0	5	A	STEREO	L-> LR	R-> LR	MONO	LRSWAP	MUTE									
30	{ OP 7 }{Volume}{# db}	0	90	A															
31	[Gr]	N/A	N/A	A															
32	{ OP 8 }{ From }{# }	0	15	A	IP 1 A	IP 2 A	IP 3 A	IP 4 A	IP 5 A	IP 6 A	IP 7 A	IP 8 A	IP 1 B	IP 2 B	IP 3 B	IP 4 B	IP 5 B	IP 6 B	IP 7 B
33	{ OP 8 }{ Mode }{# }	0	5	A	STEREO	L-> LR	R-> LR	MONO	LRSWAP	MUTE									
34	{ OP 8 }{Volume}{# db}	0	90	A															
35	[Gr]	N/A	N/A	A															
36	{IP 1 A}{Delay }{# mS}	1	###	A															
37	{IP 2 A}{Delay }{# mS}	1	###	A															
38	{IP 3 A}{Delay }{# mS}	1	###	A															
39	{IP 4 A}{Delay }{# mS}	1	###	A															
40	{IP 5 A}{Delay }{# mS}	1	###	A															
41	{IP 6 A}{Delay }{# mS}	1	###	A															
42	{IP 7 A}{Delay }{# mS}	1	###	A															
43	{IP 8 A}{Delay }{# mS}	1	###	A															
44	{IP 1 B}{Delay }{# mS}	1	###	A															
45	{IP 2 B}{Delay }{# mS}	1	###	A															
46	{IP 3 B}{Delay }{# mS}	1	###	A															
47	{IP 4 B}{Delay }{# mS}	1	###	A															
48	{IP 5 B}{Delay }{# mS}	1	###	A															
49	{IP 6 B}{Delay }{# mS}	1	###	A															
50	{IP 7 B}{Delay }{# mS}	1	###	A															
51	{IP 8 B}{Delay }{# mS}	1	###	A															
52	{ }{Status}{ }	N/A	N/A	A															
53	{ }{Groups}{ }	N/A	N/A	A															
54	[Gr]	N/A	N/A	A															
55	[Gr]	N/A	N/A	A															
56	{Video }{Stndrd}{# }	0	2	A	No Vid	625	525												
57	{Groups}{ A }{# }	0	15	A	----	1-- -	-2- -	12--	--3-	1- 3-	- 23-	123-	--- 4	1-- 4	-2- 4	12- 4	-- 34	1- 34	- 234
58	{Groups}{ B }{# }	0	15	A	----	1-- -	-2- -	12--	--3-	1- 3-	- 23-	123-	--- 4	1-- 4	-2- 4	12- 4	-- 34	1- 34	- 234
59	[Gr]	N/A	N/A	A															
60	{Group1}{ is }{# }	0	1	A	OFF	ON													
61	{Group2}{ is }{# }	0	1	A	OFF	ON													
62	{Group3}{ is }{# }	0	1	A	OFF	ON													
63	{Group4}{ is }{# }	0	1	A	OFF	ON													
64	{Cancel}{Change}{# }	0	1	A	=Ready	=Done													
65	{Set to}{A Thru}{# }	0	1	A	=OFF	=ON													
66	{Set to}{B Thru}{# }	0	1	A	=OFF	=ON													

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67	[Gr]	N/A	N/A	A		
68	{Under }{Press }{Back }	N/A	N/A	A		
69	{Remote}{AQUIRE}{Contrl}	N/A	N/A	A		
70	{Contrl}{To Get}{ ---> }	N/A	N/A	A		
71	{# }	0	1	A	AQUIRE	
72	{FORCE }{AQUIRE}{ ? }	N/A	N/A	A		
73	{ARE ->}{YOU ->}{SURE->}	N/A	N/A	A		
74	{# }	0	1	A	YES	NO
75	[Gr]	N/A	N/A	A		
76	[Gr]	N/A	N/A	A		
77	[Gr]	N/A	N/A	A		
78	[Gr]	N/A	N/A	A		
79	[Gr]	N/A	N/A	A		
80	{% > }{Mem 1 }{# }	0	1	A	Recall	DONE
81	{% > }{Mem 2 }{# }	0	1	A	Recall	DONE
82	{% > }{Mem 3 }{# }	0	1	A	Recall	DONE
83	[Gr]	N/A	N/A	A		
84	{% > }{Mem 4 }{# }	0	1	A	Recall	DONE
85	{% > }{Mem 5 }{# }	0	1	A	Recall	DONE
86	{% > }{Mem 6 }{# }	0	1	A	Recall	DONE
87	[Gr]	N/A	N/A	A		
88	{% > }{Mem 1 }{# }	0	1	A	Save	DONE
89	{% > }{Mem 2 }{# }	0	1	A	Save	DONE
90	{% > }{Mem 3 }{# }	0	1	A	Save	DONE
91	[Gr]	N/A	N/A	A		
92	{% > }{Mem 4 }{# }	0	1	A	Save	DONE
93	{% > }{Mem 5 }{# }	0	1	A	Save	DONE
94	{% > }{Mem 6 }{# }	0	1	A	Save	DONE
95	[Gr]	N/A	N/A	A		
96	{# }	0	1	A	Set As	!WAIT!
97	{# }	0	1	A	ReBoot	!WAIT!
98	{FACTRY}{RESET!}{!!!!!!}	N/A	N/A	A		
99	[Gr]	N/A	N/A	A		
100	{START?}{ }{ }	N/A	N/A	A		
101	{ ARE]}{ YOU]}{SURE?]}	N/A	N/A	A		
102	{# }	0	1	A	YES	OK!
103	[Gr]	N/A	N/A	A		
104	{UPGRDE}{SOFTWR}{ NOW! }	N/A	N/A	A		
105	{! }{ }{ }	N/A	N/A	A		

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106	{RESETS}{ }{ }	N/A	N/A	A	
107	[Gr]	N/A	N/A	A	
108	{START?}{ }{ }	N/A	N/A	A	
109	{ ARE]}{ YOU]}{SURE?]}	N/A	N/A	A	
110	{# }	0	1	A	YES
111	[Gr]	N/A	N/A	A	
112	{as_2hd}{FILE }{TIMES }	N/A	N/A	A	
113	{IS UPG}{IS REC}{OUT IN}	N/A	N/A	A	
114	{RADING}{IEVED }{3 MINS}	N/A	N/A	A	
115	{IF NO }{IT }{ }	N/A	N/A	A	

5.4 Technical Specification.

When in SDI mode:

SDI Inputs (270 Mbps, 800mV p-p±10% into 75Ω)	2 Input to SMPTE 259M
SDI cable equalisation	At least 200m of PSF 1/3 Return loss better than 18dB, 5 MHz – 270 Mhz

When in HD-SDI mode:

HD-SDI Inputs (1.845 Gbps, 800mV p-p±10% into 75Ω)	2 Input to SMPTE 292M
HD-SDI cable equalisation	At least 100m of Belden 1694A

General:

Ancillary Data	Passes all ancillary data in vertical and horizontal blanking except for CRC recalculation.
Control Surfaces	Option of local or remote **FP-9** control panel.
Chassis	**FB-9E etherBox** 1U enclosure
Supported Formats	SD 625 525 HD 1280x720/23.98p

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	1280x720/24p 1280x720/25p 1280x720/29.97p 1280x720/30p 1280x720/50p 1280x720/59.94p 1280x720/60p 1920x1080/23.98p 1920x1080/23.98psf 1920x1080/24p 1920x1080/24psf 1920x1080/25p 1920x1080/50i 1920x1080/29.97p 1920x1080/59.94i 1920x1080/30p 1920x1080/60i
Delay	<10us
Power Supply	100-240v AC. Less than 50W power consumption with 6 **AS-2** units installed.
FB-9E Dimension	Width 442mm Height 44mm Depth 300mm
Weight	<3Kg
Temperature	<25°C ambient, <55°C internal
Humidity	Recommended 40 to 55% Limits 20 to 80%

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